

OBSERVATIONS

ON THE

POISONOUS VEGETABLES

WHICH ARE EITHER

INDIGENOUS in GREAT-BRITAIN,

OR

CULTIVATED for ORNAMENT.

By B. WILMER, SURGEON.

L O N D O N :

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M DCC LXXXI.

TO
Sir WILLIAM WHEELER, Bart.

THE FOLLOWING
OBSERVATIONS
ON THE
VEGETABLE POISONS
OF
GREAT-BRITAIN,
ARE ADDRESSED,

By his most obedient, and

most humble Servant,

Coventry,
April 14, 1781.

BRADFORD WILMER.

P R E F A C E.

IN the vegetable world, the attentive observer of nature hath for his contemplation a scene, which is large and greatly varied. The mountain, the valley, the field, and the forest, produce their peculiar plants; yet each of these situations bears such as are of qualities opposite to those of others that arise from the same spot of earth. United in the place from whence they derive their nourishment, there is all imaginable distance between their qualities: and whilst some act with a kind influence upon the human frame, others undermine the secret supports of life. From the healing to the destructive, there are many degrees in the scale; yet numerous

as these gradations are, there probably may be found amongst our various vegetables those whose virtues, or whose baneful qualities, would fill up every rank.

SOME botanical authors, in describing the powers of plants, seem to have been guided only by imagination. They ascribed to them qualities which nature never gave them, and swelled beyond all probability those which they really possess. Almost every plant which they treat of, would be a certain remedy for half the disorders in the world, or a most fatal poison, if the character they give to it were true. But experience is now believed, in frequent opposition to Gerard and Parkinson ; and many herbs which were celebrated by them for their medicinal virtues, no longer
make

make a part of the *materia medica* ; whilst others are found perfectly innocent, which they had described as poisonous in their nature. It is happy for men when they increase their knowledge by an observation of facts, and no longer receive implicitly the traditions of ignorant ages.

BUT it is usual for those who find they have been misled, to give themselves up too much to doubt. Thus more than is true has been said of the virtues of plants, and now perhaps less than is true is believed. It was found that the writings of botanists were largely supplied with mistakes ; and amidst the crowd of errors which stood ready to mislead him, the unexperienced practitioner did not know what he might safely

trust to. He perceived in these works that all was not to be credited, and therefore he almost rejected all ; not recollecting that truth was probably somewhere between the two extremes.

It is fortunate that the number of poisonous herbs is very small. Even of these the dreadful effects may be prevented, by an immediate and proper attention, or removed, though they have partly taken place. They appear to act by an impression upon the nervous system, rather than by an inflammation of the stomach and duodenum, as mineral poisons do, which from this beginning produce those other intervening symptoms, that usually end in death. In vain would their offending substances be removed from the stomach by emetics,

tics, if the disorder they occasioned there had arrived at a certain degree of violence.

POISONOUS herbs in different constitutions will have various and sometimes opposite effects. This I speak from my own knowledge, having seen the most contrary symptoms produced in several persons who had taken the same poison under equal circumstances. They exhibited a proof, that both the utmost irritation, and appearances which indicated that the office of the nerves was destroyed, might arise from the same cause working its effects in different constitutions.

THE vegetable poisons might perhaps be properly separated into the two following divisions. The first including

including those from which maniacal symptoms may be expected, or the various nervous affections, from a vertigo to a fatal apoplexy. Hither might be referred the soporiferous plants, which more slowly bring on dangerous appearances, and are seldom fatal in a shorter space than twenty-four hours, affording during that time opportunities for the use of emetics, the vegetable acids, and proper stimuli, which will generally have the desired effect.

IN the other class may be placed such as produce epileptic symptoms. A loss of understanding, of speech, and of all the senses, will take place in a few minutes after these poisons are in the stomach: the muscles will be much convulsed, and death will
close

close the scene in the short period of one hour or two.

THE danger of these poisons is very great. They do not offend the palate, and therefore may pass unsuspected into the stomach: when there, they usually occasion no sickness, and therefore are not likely to be discharged without the assistance of art: and they produce their effects so hastily, that they scarcely permit any opportunity for that assistance to be given.

THERE are only three plants of this nature known in Great-Britain, two of which are natives of our island. They are the *oenanthe crocata*, *cicuta aquatica*, and *lauro-cerasus*. The last is most fatal, and requires a chemical preparation. Its poison may therefore

therefore in some measure be said to be an invention of art.

SHOULD it be asked whether poisonous plants have any use among the works of nature, it might be replied, that in judicious hands they become effectual remedies for many complaints. They are likewise innocent food to various animals. Quails will thrive upon hellebore, and goats upon water-hemlock: starlings and other birds feed upon the seeds of the cicuta major. It might be added that there are tribes of insects nourished and protected by them, which serve as a prey to other creatures that are more considerable in the ascending climax of the creation.

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OBSERVATIONS ON VEGETABLE POISONS.

CLASS I.

COMMON HENBANE.

HYOSCYAMUS foliis amplexicaulibus sinuatis,
floribus sessilibus. *Lin. Sp. Plant.* 257.

HYOSCYAMUS vulgaris & niger. *C. Bauhine*, Pin. 169.

HYOSCYAMUS niger. *Gerard. Hist. Pl.*
353.

THE root is long, tough, white, and
when recently cut through, smells
like that of liquorice.

THE stalks are thick, round, woody, irre-
gularly branched, and covered with a hairy
down.

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THE

THE leaves furrounding the stalk at their base, stand irregularly. They are large, soft, and downy, pointed at the ends, and very deeply indented at the edges. Their colour is a greyish green, and they have a virose, disagreeable smell.

THE flowers are monopetalous. They are numerous, singular, divided into five obtuse segments, and when accurately examined, are not without beauty, although they have an unpleasant appearance on the plant: they are large, of a dirty yellowish colour, reticulated with violet-coloured veins.

THE seed-vessels follow one after every flower: they are large, and contain a great quantity of seeds: of a brown, rough, and irregular figure.

THIS is the only species of henbane that is a native of Britain. It is common by roadsides and amongst rubbish, and flowers in June.

DR. Withering observes, that this plant is refused by horses, cows, sheep, and swine*.

* Arrangement of British Vegetables, vol. 1. p. 119.

It appears to afford both protection and nutriment to some insects; these are the chryso-mela hyoscyami, and the scarlet bug, *cimex hyoscyami*.

HENBANE is a very dangerous poison. The seeds, leaves, and root, received into the human stomach, are all poisonous. The root, in a superior degree, produces sometimes madness, and if taken in a large quantity, and the stomach does not reject it by vomiting, a stupor and apoplectic symptoms, terminating in death, are the usual consequences.

HENBANE is frequently found upon dung-hills, and its roots mixt with muck, are introduced into our gardens. In their external appearance they much resemble those of parsnep, from the use of which we often hear of fatal effects; but it is very probable that the roots of henbane mixt with the parsnep, which they much resemble, are the unsuspected cause of the mischief.

My friend Mr. Harrold informs me that he once saw two women, who from eating

the supposed roots of parsnep, became maniacal, and were so furious, that strict confinement was necessary for several days.

IT has been asserted by medical authors of great reputation *, that the roots of parsnep continuing in the same ground for some years, contract pernicious qualities, so as to occasion disorders of the senses. It appears, however, inconsistent with the simple and uniform operations of nature to suppose that the root of an wholesome and pleasant vegetable should merely by continuing on the same spot, become noxious : it is surely much more reasonable to conclude, that the roots or seeds of some poisonous plant might be introduced with manure, or by some other means, into the garden.

ON the 10th of March, 1765, the family of a farmer at Loughton in Buckinghamshire, consisting of six persons, dined upon pudding, boiled meat, and the roots of parsnep. Soon after dinner they all became ill, and in two

* Ray, *Historia Plantarum*, i. 420. Dan. Hoffman, *acta acad. cæsar. nat. curiosor.* vol. vi. anno 1742. Obs. 128. p. 426.

hours I was a witness of the following scene. —Mrs. York (the farmer's wife) was upon a bed with all the symptoms of an apoplexy. Her pulse was remarkably hard and full, her face was red, the senses and voluntary motions were abolished; the respiration was difficult, and much oppressed. Two of the children were stupid, and appeared like those intoxicated with spirituous liquors. A man-servant and the maid, with uncommon agitation of mind, were dancing about the room, with all the appearance of maniacal persons. A middle-aged man (the shepherd) had dined with the rest, and after dinner went about his business in the fields. At my request he was sought for, and brought home by two men, who informed me that they fortunately arrived time enough to prevent the poor man being drowned in a marlpit, near the banks of which he was staggering like one (as they said) dead drunk. I attempted to give an active emetic to the man-servant, but as soon as he received it into his mouth, he returned it into my face. Five grains of emetic tartar, dissolved in water, were conveyed into the stomach, by means of a funnel, and he soon vomited up

large quantities of the roots, &c. In a short time he recovered the use of his reason, and complained of nothing more than a slight head-ach. An emetic was given to all the rest, except Mrs. York, and after the stomach had rejected the contents, they recovered in a very short space of time.

Mrs. York had never eat any parsneps before in her life, but being prevailed upon, unfortunately, to taste them, she took more than any one of the family. All attempts to convey medicine into her stomach were ineffectual. Acrimonious and purgative glisters were injected, without producing any evacuation. The most powerful stimulants were applied to various parts of the body without any apparent effect; she could not be awakened by any methods that were put in practice for that purpose. In the evening the apoplectic snoring increased, attended with a quick pulse; her extremities were warm and moist with sweat. During the night, the difficulty of respiration, was accompanied with a rattling in the bronchia; the nostrils were compressed, her feet became cold, and at six o'clock in the morning she died.

died. I could not obtain permission to open the body.

SUSPECTING that the roots of some poisonous plant were mixed with the parsneps, I desired to see some of them. They brought me a specimen from the garden, and upon an accurate examination, I perceived them evidently of two kinds. As the roots at that time were not furnished with leaves, I took them home, and planted them in a garden. Some of them proved to be the *pastinacha sativa*, or garden parsnep, and the other the *hyoscyamus niger*, or common henbane.

A SPECIMEN of the leaves of the plant, and a description of the case, were transmitted to the Royal Society.

MANY other well attested instances of the pernicious effects of henbane have been recorded.

IN the year 1729, a person came to consult Sir Hans Sloane upon an accident that happened to four of his children, aged from

four years and a half to thirteen years, by their eating some seeds they had gathered in the fields, which they had mistaken for filberts: by one of the capsules, Sir Hans Sloane instantly knew it to be that of the *hyoscyamus niger vulgaris* (or the common henbane) which bears some gross resemblance to the husk of a filbert, and the seeds are like those of the poppy. The symptoms that appeared in all the four were, great thirst, giddiness of the head, dimness of sight, ravings, and profound sleep; which last in one of them continued two days and two nights. Sir Hans ordered them all to be bled, blistered in several places, and afterward purged with a medicine composed of elect. limit. ol. amygd. dulc. flor. sulphur & syr. flor. persic. which operated both by vomit and stool, and by this method they perfectly recovered*.

THE poisonous effects of henbane are now so well established, that no doubt of the fact can remain. In its operation and effects it

* Instances of the violent operation of henbane are given by Wepfer. *De Cicuta Aquatica*, p. 230, &c.

very much resembles those occasioned by opium when taken in large quantities; and like opium also, in a proper dose, and administered with judgment and care, it may become a very useful medicine in the hands of the cautious practitioner.

PREPARATIONS of henbane are not only sedative, easing pain, and lessening morbid irritability in a remarkable degree, but are likewise exempt from an inconvenience which always attends the use of opium. Opium occasions costiveness, whereas the extract, or other preparations of the hyoscyamus, are observed to keep the body regularly open.

DR. Storck evaporated the fresh expressed juice from the stalks and leaves of this plant over a gentle fire, to the consistence of an extract.

Two drachms of this extract were forced down the stomach of a middle sized dog. Soon afterward he seemed timorous, and lapped a great deal of water. In about half an hour he fell into a languor, kept his eyes open, and the pupils were very much dilated;

lated; he staggered as he walked, stumbled against every thing in his way, and appeared to have lost his sight. Then he laid himself to sleep, in which he discovered anxiety; and the pit of his stomach was often violently retracted. In about two hours he cast up all he had swallowed, and when he stood he trembled, and was very feeble.

AFTER vomiting three times, he had five stools. The fœces were liquid, dusky, and very fetid. His eyes continued immovable, the pupil very much dilated, and his sight seemed to be almost gone. Then he began to sleep again, the spasms about the pit of the stomach abated, and gradually went off. He slept four hours, and lay very still, nor did his limbs quiver as they had done a little time before. After this sleep his eyes returned to their natural state, and his sight seemed to be perfectly restored: his strength was good; he was brisk, and swallowed bread and flesh with a good appetite.

THIS dog was kept several weeks, in all which time he was healthy, watchful, and brisk.

DR. Storck after this swallowed every day during the space of a week one grain of the extract of henbane, without any inconvenience. He observed that he had a better appetite, and his body was more soluble than usual. Hence he concluded it might safely, in small doses, be administered to his patients.

A WOMAN 37 years of age, in the hospital at Vienna, to which Dr. Storck was physician, had been for more than a year almost every day afflicted with violent convulsions. The most powerful antispasmodics, which were either recommended by the best authors, or which in similar cases had been known to have been serviceable, were administered without any good effect. Opium only, in large doses, shortened the duration of the paroxysms, lulled the pains, but never prevented a return: and it brought on a very obstinate and habitual costiveness. In this state of the case Dr. Storck gave every day, at intervals, three grains of extract of henbane.

IN four days time she observed her appetite to return, her body was more open, and the convulsive fits were much abated in their violence and continuance. She then was ordered to take six grains of the extract. During seven succeeding days she had no return of the convulsions, and enjoyed quiet and refreshing sleep. On the eighth day she had some slight twitchings in her legs and feet, but they did not continue long. During the two following months she took, each day, nine grains of the extract, but as no returns of the convulsions were perceived in that space of time, she forbore its farther use, and obtained a permanent cure.

DR. Storck informs us that he afterwards administered the extract of henbane in twelve other cases, some of which had obstinately resisted the most efficacious medicines.

THEY were chiefly of the spasmodic kind, and if his relation of them is to be depended on, they prove that henbane in guarded doses is one of the most powerful sedative medicines with which we have hitherto been acquainted, possessing the virtues of opium, without

without occasioning the inconvenience which might arise from costiveness.

THE smoke of henbane conveyed to the part, through a small tube, is said to be a very certain cure for the tooth-ach.

THE leaves applied externally in the form of cataplasm, fomentation, or unguent, are discutient, anodyne, and abate not only inflammatory but rheumatic pain *.

* Vide Lewis Mater. Med. p. 315. Lindestolphe, de Venenis, cap. v. p. 552. Konig. Regnum Vegetab. p. 869. Hoyer, Act. physico-med. nat. curios. vol. v. p. 260. Hoffman Phil. Corp. Human. cap. vii. Haller, Stirp. helvet. p. 513. Wepfer, de Cicut. Aquat. Histor. & Noxæ.

DEADLY

DEADLY NIGHTSHADE.

Belladonna. *Ray's Syn.* 265.

Solanum melano cerasus. *C. Baubine.*

Atropa caule herbaceo, foliis ovatis integris.

Lin. Sp. Pl. 260. *Gerard. Hist. Plant.*

340. *Moris. Hist.*

Solanum lethale. *Park.* 346.

THE root is long, large, and creeping.

THE stalks are upright, firm, numerous branched, and herbaceous.

THE leaves are egg-shaped, entire, very large, smooth at the edges, pointed a little at the extremities, and of a beautiful green colour.

THE flowers stand on single foot stalks: they are formed of one petal; bell-shaped, and very lightly divided into five segments at the edge. Their colour is a dark dead purple.

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THE berries which succeed the flowers are globular ; they are first of a red colour, and afterward become black. They have a tempting appearance, and from that circumstance many have been induced to eat them to their destruction. It flowers in July.

THE deadly nightshade is found in woods, hedges, and where the ground is rich from manure, in the neighbourhood of towns and houses. It is a native of England.

LIGHTFOOT * found it in the king's park at Stirling and Icolumbkill.

THE whole plant is poisonous, and the berries † eaten by children, from their

* Flora Scotica, p. 142. vol. i.

† Buchanan, the Scotch historian, describes the destruction of the army of Sweno, when he invaded Scotland. It seems the Scots, by a truce, had engaged to supply the army of their invader with drink, and in this they mixt the juice of the berries of deadly nightshade. The Danes became so intoxicated, that the Scots fell upon them in their sleep, and killed the greatest part of them ; so that there were scarcely men enough left to remove the king in safety. This account is probably fabulous.

beautiful

beautiful appearance, have often occasioned the most fatal effects.

THE works of medical authors abound with instances of the deleterious effects of the deadly nightshade, and experience hath sufficiently ascertained the truth of their relations.

THIS plant has a faint smell, somewhat of the poppy kind, which is lost when it is dry; whether fresh or dry, there is no peculiar sensation conveyed, when the leaves are applied to the organs of taste.

MR. Ray informs us of a remarkable effect which a small part of the leaf of *Belladonna* had when applied to a small ulcer, which a lady was afflicted with beneath the eye. In one night the iris was so much relaxed, that it became paralytic, and did not contract the pupil at the approach of the strongest light. It was dilated to four times its natural size, till the leaf being removed, the parts gradually recovered their tone.

THE application was repeated three several times, and always produced the same effect *.

DR. Hill † observes, that he once saw an unhappy instance of the fatal effects of this poison.

IN the year 1743, a labourer found the berries of the deadly nightshade in a nobleman's park, where he was repairing the pales. He gave some of the berries to his children, and swallowed a large quantity himself. The symptoms came on in the following manner. The man after two hours became light-headed, giddy, and unable to stand; but not thinking of the cause, sat down to supper. He drank greedily, but could scarce swallow any thing solid. He went to bed, and presently grew worse. He complained of a dreadful pain in the breast, and difficulty of breathing. It was about five in the afternoon when he eat the berries. These symptoms came on between ten and eleven at night: and at twelve, seven hours from the

* Hist. Plant. p. 680. † Brit. Herb. p. 329.

eating them, he fell into the most dreadful ravings. Once in a quarter of an hour his senses would return for a moment; but he relapsed immediately, and every time with more violence. During the intervals of reason, his breathing was difficult, and he complained of a dreadful tightness cross his breast. Towards morning the ravings went off, but he became foolish. He was faint, breathed with difficulty, and stared and flabbered, answering foreign to questions, and seemed a perfect idiot. All this time he was affected with a most violent strangury; but by degrees this went off, and he recovered without the help of medicines. Before the country apothecary could be had, he was growing better; and he not knowing what to advise, left the family to their own management. The children both died in the course of the night. The father, when perfectly recovered, and questioned about the nature of the case, answered that he had been in the condition of one very drunk, but saw and understood all that was doing, even when he answered in the wildest manner.

THE accounts given by other authors agree with the above description: and we read of men who have continued in a state of madness from nightshade several days. To children it generally proves fatal. When adults die of this poison, the scene is usually closed within 24 hours*.

SOME boys and girls perceiving in a garden at Edinburgh the beautiful berries of the deadly nightshade, and, unacquainted with their poisonous quality, eat several; in a short time dangerous symptoms appeared, a swelling of the abdomen took place, they became convulsed: the next morning one of them

* Wepfer de Cicut. Aquat. p. 226. has given an account of some dangerous symptoms which affected three children from eating the berries of the solanum vulgare, common or garden nightshade; but as they all recovered, and as I have not met with an instance where that species of nightshade proved fatal, I have on that account omitted a description of it. Besides the solanum commune, there are other plants in this kingdom which are suspected to be poisonous; these are aconitum hyemale, colchicum vulgare, alkekengi multiflorum foliis hirsutis, supposed to be the solanum somniferum of the ancients.

died, and another in the evening of the same day, although all possible care was taken of them *.

ON the twenty-fourth of September, 1771, Dr. Lambert was desired to visit two children at Newburn in Scotland, who the preceding day had swallowed some of the berries of the deadly nightshade. He found them in a deplorable situation; the eldest (10 years of age) was delirious in bed, and affected with convulsive spasms. The younger was not in a much better condition, in his mother's arms. The eyes of both the children were particularly affected. The whole circle of the cornea appeared black, the iris being so much dilated as to leave no vestige of the pupil. The tunica conjunctiva much inflamed. These appearances, accompanied with a remarkable kind of staring, exhibited a very affecting scene. The symptoms came on about two hours after they had eaten the berries: they appeared at first as if they had been intoxicated, afterwards lost the power of speaking, and continued the whole night.

* Lond. Mag. Sept. 1747.

so unruly, that it was with much difficulty they were kept in bed.

DR. Lambert gave them 15 grains of white vitriol, which soon occasioned a sickness. The emetic was repeated, and they vomited plentifully; they were ordered to drink an oily emulsion. Cathartic medicines were given by the mouth, and a common clyster was administered. At twelve o'clock at night, the purgative medicines produced the wished-for effect, and the stools appeared purple like the juice of the berries, intermixed with their black skins: after this they were soon relieved: they spoke, and became sensible; but their eyes continued several days in a weak state, and the last symptom which remained was a vertigo.

It appears from the history of this case, that emetics were of no use, and the reason is very obvious. Dr. Lambert was not called till twenty-one hours had elapsed from the time the children eat the berries, and the stomach had probably long before passed them into the intestines.

THE dangerous effects of the deadly nightshade were known to the ancients. Theophrastus called this plant strychnos, and the symptoms which it produced were called strychnomania. Subsequent authors have ventured to recommend the internal use of it in very small quantities in obstinate diseases; and if we believe the testimony of Mr. Ray *, the external application of the leaves in the form of a cataplasm, have been found efficacious in cancerous complaints. An infusion of the berries given internally has been said to have been successful in inflammations †, and dysenteries ‡. Juncker informs us, that two cancerous cases were cured by it, and recommends its farther use §.

IN the year 1754, Dr. Lambergen printed at Groningen an inaugural dissertation, to which was added an account of a cancer in a woman's breast, that had been radically cured by the infusion of the leaves of deadly nightshade. This case was published eight years

* Ray's Hist. Plant. p. 680.

† Tragus, Stirp. Hist. p. 305.

‡ Ray's Hist. Pl. Lin. Mat. Med. § 95.

§ Conspect. Chirurg. p. 314.

after the cure was perfected, and the woman is said to have continued perfectly well.

FROM reading this case, the late Mr. Gataker determined to try the effects of nightshade in St. George's hospital. He administered it in a variety of cancerous cases, as well as scrophulous and scorbutic ulcers, but his success was in the sequel by no means equal to the sanguine expectations he had formed of it. In the first paper he communicated to the Royal Society upon this business, he gave an account of some cases wherein it appeared to have been attended with success. From the recommendation of Mr. Gataker, the solanum was also tried in most of the public hospitals of London. By the concurrent testimony of several surgeons, under whose inspection it was administered, it was at length agreed, that the nightshade was by no means possessed of any specific properties either against cancerous or scrophulous diseases; that most of the patients in whose cases it appeared at first to be serviceable, relapsed; that it was, except in small dozes, unmanageable in its effects; that it was extremely uncertain in the mode

of its operation, sometimes violently purging the patient, sometimes stimulating the kidneys, or increasing greatly the cuticular discharge, and sometimes producing no evacuation of any kind; that, in short, no consequence of its administration was with any certainty to be expected, except the mischief it did to the organs of vision. Most of those who took it complained either of giddiness, violent throbbing pain in the eyes, with a discharge of tears, and in all the pupil was as much dilated, and had the same appearance, as if the patient laboured under a concussion of the brain, or paralytic state of the optic nerve: and it was much suspected that the use of the solanum hastened the death of several who took it *.

MR. GATAKER, however, in a publication since the observations he communicated to the Royal Society, ingenuously acknowledges, that his expectations were not answered; that the event of some cases disappointed his first hopes, either by the cure proving incomplete, or only temporary; that he found

* Bromfield on Nightshade, p. 69.

from further experience, the operation of the medicine to be irregular, and the use of it in some instances, if persevered in, attended with troublesome symptoms. He observes also, that nightshade is a medicine not so much calculated for general use, as for particular cases, where the common remedies have failed, and where this seems, *upon trial*, to be free from the principal inconveniences which so often attend the use of it *.

* Gataker's Essays, p. 87.

BLUE MONKSHOOD.

ACONITUM foliorum laciniis linearibus, superne latioribus, linea exaratis. *Lin. Spec. Pl.* p. 538.

ACONITUM cæruleum, five Napellus. *J. Baubine.*

Napellus verus, *Lobel.*

ACONITUM spica florum pyramidali. *Morif.*

THE root is divided into several parts : it is long, thick, and has many fibres.

THE leaves rise from the root very early in the spring: they appear first in a globular form, and when they expand, become large, of a beautiful green colour, and are divided into numerous, long, narrow segments. This plant is four feet high. The leaves from the stalk are placed irregularly, they are smaller than those which immediately arise from the root, but like them they are subdivided into numerous segments.

THE

THE flower is extremely singular; it has five petals, one of them is uppermost, and is hooded, two are placed on the sides, and two below: the lateral petals are broad, and incline to each other; the inferior ones are longer than those on the side, and droop downward. Within the flower are two nectaria. The flowers stand on long spikes, on the superior part of the branches; they are large, and of a full beautiful blue. Three capsules, inclosing the seeds, succeed every flower.

BLUE Monkshood is spontaneously produced in Germany, and some other northern parts of Europe, and is very common in our gardens, where it is cultivated for ornament.

THIS is certainly a poisonous plant, and many instances have been adduced of its dangerous effects. Dodonæus gives an account of five persons who eat the root of blue monkshood in their food at Antwerp, and they all died. It has probably obtained the name of wolf's-bane from a tradition that wolves, in searching for particular roots which they in part subsist upon in winter, frequently

frequently make a mistake and eat the roots of *napellus ceruleus*, which generally proves fatal to them.

IN the year 1764, John Crumpler, a weaver in Spitalfields, having supped upon some cold meat and fallad, was suddenly taken ill; and when Mr. Bacon, the Surgeon employed upon this occasion, visited him, he found him in the following situation. He was in bed, with his head supported by an assistant, his eyes and teeth were fixed, his nostrils compressed; his hands, feet, and forehead cold; no pulse to be perceived; his respiration short, interrupted, and laborious.

MR. Bacon was informed, that soon after his patient had supped, he complained of a sensation of heat, affecting the tongue and fances: his teeth appeared loose; and it was very remarkable, although a looking-glass was produced, and his friends attempted to reason him out of the extravagant idea, yet he imagined that his face was swelled to twice its usual size. By degrees the heat, which at first only seemed to affect the mouth and adjacent parts, diffused itself over his body
and

and extremities; he had an unsteadiness and lassitude in his joints, particularly of the knees and ancles, with an irritable twitching of the tendons, which seemed to deprive him of the power of walking; and he thought that in all his limbs he perceived an evident interruption to the circulation of the blood. A giddiness was the next symptom, which was not accompanied with a nausea. His eyes became watery, and he could not see distinctly: a kind of humming noise in his ears continually disturbed him, until he was reduced to the state of insensibility before described.

BEFORE Mr. Bacon's arrival, some of his friends, believing he had been poisoned, had forced down some oil and water, and afterward some carduus tea, in consequence of which, the stomach threw up its contents; but notwithstanding this precaution, the symptoms increased.

MR. Bacon, by the repetition of carduus tea, &c. encouraged the vomiting, and in the intervals administered some spoonfuls of a stimulating cordial medicine. After some
time

time the patient seemed relieved, and by degrees recovered.

MR. Bacon was informed that the salad which the patient had eaten for supper, consisted of common herbs bought at a stall in the market, except some celery picked out of their own garden. He desired to see some of the celery: a specimen was brought to him, which Mr. Bacon perceived was the blue Monkshood, or *aconitum cæruleum*.

DR. Storck, of Vienna, reduced to powder the leaves and stalks of blue monkshood: some of this applied to his tongue, occasioned some transient, although pungent pains in his mouth, accompanied with a sensation of heat. With a view to ascertain whether the powder had any corrosive effects, he sprinkled some of it upon the surface of a fungous ulcer. The patient complained neither of heat nor pain; and although the application was several times renewed, the fungous flesh was neither consumed nor restrained in its progress. Dr. Storck after this evaporated the expressed juice to the consistence of an extract. Some of this applied upon the
tongue,

tongue, occasioned a slight titillation. He insinuated a grain of the extract between his eye-lids, without observing the effects of any preternatural irritation. He afterwards prepared the following powder :

R Extract. Napel. cærul. gr. ii.

Sach. puris. ʒ ii. M. & contrite in mortario marmoreo.

THE Doctor took ten grains of this powder without any apparent operation. He then swallowed twenty grains. Throughout the whole day, a very profuse perspiration was the consequence. Hence he inferred, that as the extract of monkshood increased so very remarkably the cuticular discharge, it was adapted to diseases in which the morbid matter might be expelled by the sudoriferous pores.

DR. Storck and Dr. Colin, we are informed, administered the extract of monkshood to fourteen different patients in the hospital at Vienna, with astonishing success. It relieved in a short time the violent pains of the gout and chronic rheumatism, by occasioning a plentiful diaphoresis; it softened and even dissolved

dissolved chalk-stones, nodes, tophi, and cured exostoses. Unfortunately however it happens, that experiments made upon the napellus in this country, do not confirm all that has been said of it by Dr. Storck. I evaporated the juice expressed from the leaves and stalks of blue monkshood to the consistence of an extract. I tried it with two patients who had the chronic rheumatism, and it was administered in the doses recommended by Dr. Storck. After having given it (what I thought) a fair trial, and finding it do neither good or harm, I threw it aside for the use of more efficacious remedies.

THE napellus is said by authors not to be poisonous in Sweden and some other countries. In the *Ephemer. Medic. Phys. Curios.* An. 11. Obs. 42. p. 79. is a treatise under the following title: D. Martini Barnardi à Bernz. *Napellus in Polonia non venenosus*, wherein some instances are given to prove that the napellus mentioned by Linnæus is not poisonous in Poland.

IT must be observed, however, that the kind of napellus mentioned by Linnæus not
to

to be poisonous in Sweden, is not the blue monkshood, but the *aconitum lycoctonum luteum majus*. Bauhin. or yellow monkshood, which Linnæus saw a family in Sweden mix and eat with their soup, without any bad consequences.

LIGHTFOOT * found this plant in Scotland, in several places, about Hoddam-castle, in Annandale, &c. but always near houses, so that he suspected it was not indigenous.

* Flor. Scot. vol. i. p. 485.

DOGS MERCURY.

Mercurialis caule simplicissimo, foliis scabris.

Lin. Sp. Plant. 1465. (*Gerard.* 333. f. 1.

Pet. Herb. t. i. f. 5 & 6. *Moris. Hist.* f.

5. t. 34. f. 3 & 4.)

Mercurialis perennius repens Cynocrambe dicta. *Ray's Syn.* 138.

Cynocrambe mas & foemina. *Gerard.* 333.

Mercurialis montana spicata. *Bauh. Pin.* 122.

Mercurialis sylvestris Cynocrambe dicta vulgaris, mas & foemina. *Park.* 295.

THE root is creeping, light-coloured, and fibrous.

THE stalk is a foot high, erect, green, juicy, and unbranched.

THE leaves are oval, serrated, pointed at the extremity, placed in pairs opposite to each other.

THE

THE flowers grow at the tops of the stalk, and in thin slender spikes out of the axæ of the leaves, and are of a light green. The flowers are of two kinds, male and female. The furrows of the *germen* receive a barren filament, terminated with a gland, marked with two dark-coloured spots.

IT is found very common in woods, shady places, upon ditch banks, and flowers very early in spring.

LIGHTFOOT * found it in many parts of Scotland, both in the Highlands and Lowlands.

THIS plant is poisonous. It is of a soporific deleterious nature, and is said to be noxious both to man and beast. Many instances are recorded of its fatal effects.

MR. Ray acquaints us with the case of a man, his wife, and three children, who were poisoned by eating the cynocrambe fried with bacon.

* Flor. Scot. vol. ii. p. 621.

A MELANCHOLY instance is related in the Philosophical Transactions, N^o CCIII. of its pernicious effects upon a family who eat at supper the herb boiled and fried. It produced at first nausea and vomiting, and afterwards comatose symptoms. Two of the children slept twenty-four hours : when they awakened, they vomited again and recovered. The other girl could not be awakened during four days, at the expiration of which time she opened her eyes and expired.

DR. Withering * observes, that the cynocrambe is eaten by goats and sheep, and refused by cows and horses. When it is infused in water, it affords a fine deep blue colour. Lightfoot † says it is called in the isle of Skye, lus-glen-bracadale; and that he was there informed, it is sometimes used in a weak infusion to bring on a salivation. The experiment, however, seems dangerous.

* Arrangement of British Vegetables, vol. ii. p. 616.

† Flor. Scot. vol. ii. p. 621.

THORN-APPLE.

Datura pericarpis spinosis, erectis ovatis.

Lin. Sp. Pl. p. 179.

Solanum foetidum, pomo spinoso oblongo, flore albo infundibuli formi. C. Baub.

Pin. p. 168.

Solanum maniacum. Diascor. Colum.

Solanum pomo spinoso oblongo, flore calathoides, stramonium vulgo dictum. Ray's Syn. 266.

Stramonium spinosum. Gerard. 349.

THE root is long, large, and fibrous.

THE stalk is of a pale green, strong, and near three feet high.

THE leaves are large, of a lively green, placed on strong peduncles; they are broad, pointed at the extremity, beautifully indented, and are placed without any regular arrangement.

THE flower consists of one petal, funnel-shaped, tubular, and folded at the border in five parts. They grow at the bifurcations of the branches, are large, and of a milk-white colour.

THE feed-vessel is oval, large, and covered with short, sharp, strong thorns. The seeds are brown. It flowers in August.

IT is a native of South-America, and is cultivated in our gardens either for its singularity or ornament.

DR. Withering says, that cows, goats, sheep, and horses refuse it *. He likewise acquaints us, that it is found common amongst rubbish, in the neighbourhood of London.

I HAVE likewise observed the stramonium flourish upon a bank on the London road near Coventry; but it is probable the seeds may have been conveyed thither from a large nursery-garden in the neighbourhood, and where many foreign plants have been propagated. It is certain that the plant is not in-

* Arrangement of English Veg. vol. i. p. 119.

digenous in this kingdom, nor did Mr. Light-foot meet with it in Scotland.

THE feed-vessels of thorn-apple supply nourishment to many insects; and it is very common to see the cup quite a skeleton, the fleshy parts having been eaten away.

THE seeds and leaves of thorn-apple received into the human stomach, produce first a vertigo, and afterwards madness. If the quantity is large, and vomiting is not occasioned, it will undoubtedly prove fatal.

BOERHAAVE * informs us, that some boys eating some seeds of thorn-apple, which were thrown out of a garden, were seized with giddiness, horrible imaginations, terrors, and delirium. Those that did not soon vomit, died.

THE plant has a disagreeable, nauseous smell, when rubbed between the fingers.

DR. Storck expressed the juice from the leaves and stalks of thorn-apple in a marble

* Acad. Lect. on the Nerves, published by Dr. Van Eems.

mortar, and afterward evaporated it to the consistence of an extract. He assisted in the process, from whence his head seemed much affected. He placed a grain and a half of the extract upon his tongue, and suffered it to dissolve. Although it produced a very nauseous taste, he swallowed it. It occasioned no particular effects, and thence he concluded it might, at least with safety, be given to patients. In looking over the writings of medicinal authors, he found they all agreed in the assertion, that thorn-apple disordered the mind, caused madness, and convulsions. By the introduction, however, of a new mode of reasoning, the Doctor made the following inference: that, as thorn-apple, by disordering the mind, caused madness in sound persons, it was probable, by disturbing and changing the ideas and common sensory, it might bring the insane, and persons deprived of reason, to a sound state of mind: and by a contrary motion, remove convulsions in the convulsed.

DR. Storck, from this theory, proceeded to practice in the hospital at Vienna, and published several cases wherein extract of
thorn-

thorn-apple, given in small doses, and continued a long time, produced a cure. They were maniacal and epileptic patients, who the Doctor says experienced the good effects of this mode of treatment.

THE extract of thorn-apple, I believe, has not been tried in England, at least to my knowledge; and the reason probably has been, that we have been much disappointed in what Dr. Storck has said relative to the medical effects of cicuta, and other poisonous plants.

COMMON

COMMON HEMLOCK.

CONIUM, seminibus striatis. *Lin. Sp. Pl.*
349.

CICUTA. *Gerard. 1061. Ray's Syn. 215.*

CICUTA major. *Baub. Pin. 160. Moris.*
Hist. Pl. vol. iii. 290.

CICUTA vulgaris major. *Park. 933.*

CICUTA vulgaris. *Phyt. Brit. 27. Hill.*
Brit. Herb. 411.

CICUTA major vulgaris maculata foetens.
Storck de Cicut.

CONIUM seminibus striatis foliolis tenuori-
bus. *Miller. Gard. Dict.*

THE root is white, perpendicular, and
furnished with lateral fibres.

THE leaves, which early in the spring arise
from the root, are of a very dark green co-
lour: they are minutely divided and sub-
divided, and serrated at the edges.

THE stalk is fistulous, firm, upright, articulated, smooth, round, and six feet high: it is thickly stained with innumerable purple spots, of various sizes, and indeterminate figures.

THE leaves are placed irregularly on the stalk; they are, like the radical ones, minutely intersected, and of a strong green colour.

THE flowers are small and white; each is composed of five petals, inflected, and heart-fashioned. They are disposed in large umbels, upon divided and subdivided branches.

THE seeds are rounded, striated on one side, and plain on the other, and are of a brown colour.

HEMLOCK flowers in July, and is very common under hedges in most parts of Europe. Where the soil is rich and moist, it is observed to be more luxuriant than in other places.

THIS plant has a virose, disagreeable smell, but the fresh juice communicates no particular impression to the organs of taste.

IF

IF the expressed juice is placed in a state of rest until the feces subside, and afterward poured off, it seems to lose all the specific flavour of the plant.

HEMLOCK received into the human stomach, has occasioned death; but, like other plants of the poisonous kind, it is not only innoxious to certain animals, but appears to furnish them with food and nourishment.

MR. Ray informs us, that he found the crop of a thrush full of the seeds of hemlock, at a time when corn was plentiful *.

DR. Withering observes, that hemlock is eaten by sheep, and refused by horses, cows, and goats †.

LIKE other plants of the narcotick kind, the deleterious effects of hemlock are much lessened by vegetable acids ‡.

ALTHOUGH

* Nos quoque ventriculum otidis seu turdæ avis dissectum cicutæ semine refertum invenimus, quatuor tantum aut quinque frumenti granis intermixtis: quod etiam messis tempore avis illa pro cicuta neglexerat: adeo delectatur cicuta. Hist. Plantar. vol. i. p. 451.

† Arrangement of English Veg. vol. i. p. 163.

‡ Cicuta, præsens illud venenum, si coquitur in aceto, sine noxa comedi potest, quod probavi aliquoties, experimenti

ALTHOUGH the root of hemlock has by many been supposed to be the most active, and the most poisonous part of the plant; yet it has been given in doses of thirty grains in quartan agues, acute fevers*, and schirrous livers †, without any ill effect.

MR. Ray informs us, that his friend Mr. Pettiver eat half an ounce of the root of this plant; and that Mr. Henley, a friend of Mr. Pettiver's, in his presence eat, without any inconvenience, three or four ounces of the same root §.

FROM these instances, and many others, the poisonous effects of this plant have been much suspected.

SINCE the cicuta was recommended by Dr. Storck as a certain cure for many of the

experimenti ergo, Lugduni Batavorum, ubi in fossis extra urbem frequens crescit. Lindestolpe, de Venenis, p. 431.

* Bowle apud Raium Hist. Plant. i. 451.

† Renealme, Observ. iii. and iv. Etmuller, Schræder. Diluc. par. i. sect. ii. p. 111.

§ Synops. ed. 2. p. 326.

most

most terrible complaints to which the human body is subject, it has been in common use in every part of Europe; and when we consider the great extent, and almost universality of its application, in every chronic disease which had withstood the operation of other remedies, it appears surprising that we have not heard of a single instance of its poisonous effects. It has been given by the regular physician, as well as the apothecary's apprentice, in large doses, in the forms of extract, powder, juice; and it has been applied externally in cataplasms, fomentations, baths, and injections. It has been very liberally administered to men, women, and children, with impunity. Either our hemlock must be milder than that described by authors, or, which is much more probable, quite a different plant.

CARDANUS * mentions a man who was killed by eating a cake wherein hemlock was an ingredient: and Brassavola assures us, that it is mortal not only to men, but also to geese and swine. Instances of the deleterious effects

* Phil. Transf. N^o 473.

of hemlock may be found in many other authors *.

IT is now generally understood that the Athenian poison (*cicuta* †), of which Socrates perished, was certainly not the plant we call hemlock. It must either have been the *cicuta aquatica*, or the *oenanthe, succo viroso*.

SOME have imagined, particularly Dr. Mead, that the celebrated poison of Athens, with which condemned criminals were put to death, was a composition ‡.

IT is anciently recorded of the people of Marseilles, that they had a poison kept by the public, in which *cicuta* was only an ingredient, a dose of which was allowed by the magistrates to any one who could shew a reason why he should desire death. This very singular custom, Valerius Maximus observes, came from Greece, particularly from

* Matthiolus, Scaliger, Kircher, Boccone, &c.

† *Cicuta quoque venenum est, publica Atheniensium poena invisa.* Plin. 26, 13.

‡ Mead's Works, 4to Edit. p. 111.

the island Ceos, where he saw an example of it *.

THEOPHRASTUS says, that Thrasyas, a great physician, had invented a composition, which would cause death without any pain; and that this was prepared with the juice of hemlock and poppy together, and did the business in a small dose †.

THE cicuta major was called conium by Dioscorides and Theophrastus. Linnæus has expressed his doubts with regard to the poisonous effects of this plant, and has retained the old name conium. Contradiction and confusion appear in the various accounts which authors give us of hemlock: and many accidents *said* to have been the effects of cicuta, were certainly produced by water hemlock, or the oenanthe crocata. It appears extremely absurd, that the same name should be applied to two plants, which have so little resemblance to each other, as the cicuta major, and cicuta aquatica. They bear their

* Valer. Max. lib. ii. c. 6. §. 8.

† Hist. Plant. lib. ix. c. 17.

flowers in umbels, and this is the chief circumstance in which they agree.

LUCRETIVS by *cicuta* certainly means water hemlock, when he informs us, that goats eat it freely; those animals have often been observed to feed upon the *cicuta aquatica*, and it is very well known that hunger itself will not prompt them to touch the *cicuta major* *.

TORRENTIVS observes, that Persius has confounded *cicuta* with hellebore, or some other certain cure for madness †.

THE stalk of hemlock being hollow, light, and jointed: hence the poets often use its name for the reed, of which pipes were made ‡.

* ————— “ *pinguescere sæpe cicuta*
Barbigeros pecudes, homini quæ est acre venenum.”
LUCRETIVS.

† “ *Calido sub pectore mascula bilis intumuit,*
“ *Quam non extinxerit una cicuta.*” PERSIVS.

‡ “ *Et Zephyri cava per calamorum sibiila primum.*
“ *Agrestes docuere cava instare cicutas.*” LUCRET.

“ *Est mihi disparibus septem compacta cicuta fistula.*”
VIRG. ECL. ii. 36.

THE only well-attested case of the poisonous effects of the *cicuta major* in England, is the following :

DURING the rebellion in 1745, some Dutch troops were quartered at Waltham-abbey, in Essex. On Sunday, May 6, two of the soldiers collected in the fields, adjoining to that town, a quantity of herbs sufficient for themselves and two others for dinner, when boiled with bacon. These herbs were accordingly dressed, and the poor men first eat of the broth with bread, and afterwards the herbs with the bacon. In a short time they were all seized with violent vertigos : soon after they were comatose : two of them became convulsed, and died in about three hours. The people of the town were much alarmed at this accident ; and Dr. Barrowby, a physician, being upon the spot, immediately attended, and ordered the other two, at that time almost dead, large quantities of oil, by which means they threw up most of what they had eaten, and afterwards became better. In all of them, the effects resembled those produced by a large dose of opium.

THE next day Dr. Watson was at Waltham-abbey, and saw one of the men so much recovered, that he only complained of a heaviness in his head; and the other was so well, as to be able to perform his regimental exercises. There was a fifth soldier, who informed the doctor, that he eat some of the bread out of the broth, but perceived very little inconvenience from it. It happened that the two men who gathered the herbs were those that died.

A DUTCH officer attended Dr. Watson to an inn where there were two other soldiers, who had seen and known the herbs which had been eaten. He also attended the doctor into the fields to shew the plants growing. They first gathered the *cicutaria vulgaris* of J. Bauhine, or cow-weed: then the *myrrhis sylvestris*, *feminibus asperis*, of Casper Bauhine, or small hemlock chervil. They then gave the Doctor some *cicuta major*, and smelling it, immediately said, that was the herb which killed their comrades; which there was no reason to doubt of, as the two former plants grow under almost every hedge, and are eaten by cows, and given to tame

rabbits for food ; whereas cattle constantly refuse to eat hemlock *.

THE reputation of hemlock, as a medicine, seems to be in a losing state. In consequence of too much having been said of its virtues, when it was first introduced into practice, too little may perhaps now be believed : and because it will not cure cancers, it is supposed by some practitioners to be ineffectual in every disease whatever. As far as can be deduced from the different cases in which it has been tried in England, hemlock possesses very considerable medical virtues ; and it has been proved to be deobstruent, and anodyne. It has been serviceable in scrophulous cases. In painful ulcers, discharging an ichourous lymph, the internal use of this plant has been known to procure ease, to mend the discharge, and improve the complexion of the face. Whether these effects are obtained by any specific alteration of the fluids, or are merely produced by the sedative properties of cicuta, we are not certain. It is probable, however, it acts in this respect by easing

* Phil. Transf. N° 471. p. 21.

pain. Hemlock, like opium, lessens morbid irritability in a very remarkable degree, but, like opium, it does not occasion costiveness.

FONTANUS * assures us, that a patient recovering from the plague, and being unable to get any sleep, had recourse to cicuta with good effect. The remedy after some time was discontinued, and in a subsequent illness, endeavours were used to procure rest by repeated doses of opium, which had no operation; and the use of cicuta was again called in with the desired success.

WE frequently hear of people being suddenly taken ill after eating mushrooms; and instances are recorded of their fatal effects. It is to be lamented, that upon these occasions the particular species of fungus is seldom ascertained. Dr. Percival, in the last volume of his essays, page 267, relates the case of a man who was poisoned by eating a mushroom, which Mr. Hudson thinks was the fungus parvus, pediculo oblongo, of Ray. In the very numerous class of fungi, which Great-Britain produces, the agaricus muscarius, and the fungus piperatus, may be reckoned the most poisonous.

* Nic. Fontani Respons. & Curat. Medic. p. 162.

BUG AGARIC.

AGARICUS Muscarius.

AGARICUS stipitatus, lamellis dimidiatis foliariis, stipite volvato, apice dilatato, basi ovato. *Lin. Sp. Plant.* 1640.

FUNGUS minor campestris rotundus, lamellatus, inferne albus, superne purpureus. *Ray's Synops.* 3.

THE pillar or stalk is white, thick, and hollow; egg-shaped at the base, and surrounded at the middle with a pendulous membrane.

THE pileus, or hat, is large, almost flat, six inches or more in diameter, of a red or crimson colour, sometimes beset with angular, white, downy warts.

THE lamellæ, or gills, are white, flat, and inversely spear-shaped: the greater number extend from the rim of the pileus to the stalk, the rest only half way.

WHEN

WHEN the fungus is decaying, the gills become of a brownish complexion.

IN Scotland this and other fungi of the agaric kind, are called paddock-stools. It grows in woods, and frequently in pastures.

LIGHTFOOT observed it in Scotland, at Blair in Athol, and in the woods at the cascades of Moness, near Taymouth *.

THE agaricus muscarius will destroy bugs, if rubbed upon the parts of the bed, where they retreat in the day. The inhabitants in the north of Europe, whose houses at the end of summer are infested with flies, infuse it in milk, and set it in their windows. As soon as the flies taste it, they are instantly poisoned.

HALLER relates, that six persons of Lithuania, in Poland, perished at one time by eating it; and that in Kamtschatka it had driven others raving mad. Two or three of these fungi may perhaps be eaten without

* See Lightfoot's Flora Scotica, vol. ii. p. 1010.

danger, but more will intoxicate, and bring on a delirium. The Russians, however, are bold enough to eat these, and almost every other kind of fungus. Perhaps they are pleased with their inebriating quality; for in the *natural* history of Kamtschatka, (p. 208, 209) we are told that the inhabitants prepare a liquor from an infusion of this agaric and the epilobium angustifolium, which taken in a small quantity exhilarates the spirits, but in a larger dose brings on a trembling of the nerves, intoxication, delirium, and madness*.

* Flor. Scot. vol. ii. p. 1010.

PEPPER AGARIC.

FUNGUS piperatus albus, lacteo succo turgens. *Ray's Synops.* 4.

FUNGUS albus acris. *Bauh. Pin.* 370.

AGARICUS stipitatus, pileo planiusculo lactescente, margine deflexo, lamellis incarnato-pallidis. *Lin. Sp. Pl.* 1641.

THE stalk is about two inches high.

THE pileus is convex when young: as it expands, it becomes nearly flat: its colour is a dirty white, with a mixture of grey.

THE disk is constantly bent inwards: when the fungus is decaying, the hat becomes depressed in its centre, and is sometimes seen funnel-shaped.

THE lamellæ are close, numerous, and of a pale fresh colour. When any part of this fungus is wounded, a cream-coloured liquid distils from the part, extremely acrid
in

in its nature, and very stimulating if applied to the tongue.

It is very common in woods, particularly near the roots of trees. Lightfoot observed it at Blair in Athol, and many other places in Scotland *.

THIS fungus, when freely taken, has been attended with fatal consequences †. John Bauhine informs us, that after having handled it, he rubbed his eyes by accident, and brought on a violent irritation upon the eye-lids: and it is remarkable, that when this vegetable has lost its acrid juice by exsiccation, its caustic quality remains.

THE deleterious effects of some of the fungi were known to the ancients, particularly the boletus, mentioned by Juvenal, on account of the death of the emperor Claudius ‡. This circumstance is also described by Pliny.

SOME

* Flor. Scot. vol. ii. p. 1014.

† Vide J. and C. Bauhine, Ray, Morison, Tournefort, Vaillant, Dillenius, and Micheli, who have given instances of the pernicious effects of fungi.

‡ “ Vilibus ancipites fungi ponentur amicis

“ Boleus domino, sed qualem Claudius edit.

“ Ante illum uxoris, post quem nil amplius edit.”

SAT. V.

“ — Minus

SOME species of the boletus are now eaten in Italy, when young, and are esteemed a great delicacy. The Germans also receive them as a dainty under the name of gombas and brat-biilz.

MR. Lightfoot observes that deer, sheep, and swine will feed upon the boleti, and are sometimes disordered by them. In cows and other cattle they have been known to create bloody urine, nauseous milk, swellings of the abdomen, inflammation in the bowels, diarrhœas, and death. It is from hence obvious how cautious men ought to be in the use of them.

SCARAES, dermestes, and many other insects feed upon and breed in them in abundance, and doubtless it is their proper food. It is pity men should rob them of it.

THE effects of the noxious fungi cannot be better described than in the words of the celebrated Haller.

“ — Minus ergo nocens erit Agrippinæ
 “ Boletus: siquidem unius præcordia preffit
 “ Ille senis, tremulumque caput descendere jussit
 “ In cœlum. SAT. vi.

“ ALL

“ ALL fungi are crude in their nature, of
“ speedy growth, and sudden decay. They
“ spring up, arrive at maturity, and perish in
“ a few days, most of them dissolving away
“ in a black corrupted liquor, of a foetid
“ nauseous smell. They are the food of
“ snails, beetles, flies, maggots, and the
“ nidus where they deposit their young.

“ THE Russians, indeed, devour almost
“ every species, even those which other na-
“ tions esteem the most poisonous, such as
“ the agaricus muscarius, piperatus, &c. but
“ all of them are a doubtful and suspicious
“ food, and the most innocent have proved
“ sometimes prejudicial.

“ BY analysis, it is found that seven parts
“ of eight in their composition are watery.
“ They yield, by fire, a yellow spirit like
“ hartshorn, a yellow empyreumatic oil,
“ and a dry, volatile, crystalline salt: so
“ that their nature is evidently alkaline, ex-
“ tremely prone to corruption.

“ THEIR fibres are tough, and very diffi-
“ cult to digest, swelling in the stomach like

“ a

“ a sponge : and there are instances of their
 “ remaining undigested for three days, be-
 “ fore their bad effects have appeared. The
 “ maladies they occasion are a swelling of
 “ the abdomen, restlessness, heart-burns,
 “ vomitings, colics, difficulty of respiration,
 “ hiccoughs, melancholy, diarrhœas, accom-
 “ panied with a tenesmus, and gangrenes.
 “ To which dreadful complaints, the acri-
 “ monious quality of some fungi bring on
 “ besides, inflammations in the mouth,
 “ with dysenteric stools.

“ LASTLY, it is certain that some species
 “ have an intoxicating quality, followed
 “ often by deliria, tremblings, watchings,
 “ faintings, apoplexies, cold sweats, and
 “ death itself.

“ SOME have fancied that skilful cookery
 “ would deprive them of their bad effects,
 “ and that oils would sheath their noxious
 “ qualities ; but these are fatal deceits, not
 “ to be trusted. To persons suffering from
 “ eating any species of fungi, the most approv-
 “ ed and speedy remedy is to use emetics and
 “ cathartics.” *Haller, Helvet. Hist.* p. 2338.

THE different vegetable poisons, of which we have hitherto treated, resemble each other very much in their effects. They all disturb the functions of the nervous system, producing either vertigo, faintness, delirium, madness, stupor, a paralytic state of the muscles, or apoplectic symptoms. These appearances come on gradually; and if a vomit is given, or the stomach spontaneously rejects early the poisonous substance, health speedily returns. But if the poison should have been taken in large quantities: if emetics cannot be conveyed into the stomach, or the nerves should have been so deadened as to be insensible to their irritation, there is much reason to fear that the case will terminate fatally.

WHEN any of the narcotic vegetable poisons have been unfortunately taken, the indications of cure will be,

1. To unload the stomach by the speedy administration of an active emetic.

2. To procure stools either by proper cathartics, if the patient can swallow them, or by the injection of irritating clysters.

3. To

3. To correct and counteract the sedative effects of the poison, by giving from time to time draughts of some vegetable liquor, weak sparkling cyder or perry *. And,

4. If any paralytic symptoms should remain, or the muscular action be much impaired, proper stimuli should be applied, such as synapisms and blisters; but more particularly the use of electricity is indicated.

By observing these rules, I once saw a patient who had taken two ounces of the tinctura thebaica perfectly recover in two days.

THE poisons constituting the first class, in general have a virose disagreeable smell and taste: on the contrary, those which we are about to describe, appear by the evidence of the senses to be perfectly harmless. They speedily occasion epileptic symptoms. Of all epilepsies, these are the *most fatal*;—of all poisons, these are the most deadly. Pleasant

* Dr. Mead assures us, that he has given, with uncommon success in these cases, a mixture of salt of wormwood and juice of lemons.—MEAD'S WORKS, 4to edit. p. 128.

to the taste, or inoffensive to the palate, they pass unsuspected into the stomach; as soon as they take possession there, they lock up both the doors; the upper and lower orifices are at the same time shut up by spasms; nothing can be expelled, nor can any thing be got in: all possibility of relief is cut off; and should that principle inherent in animal life, which tends to throw off every thing injurious to the machine, act, it produces those ineffectual heavings and struggles, which answer no other purposes than to accelerate and increase the effects of the poison.

SOMETIMES, by some secret mode of operation, which we shall probably never be acquainted with, they occasion *instantaneous* death; and when this happens, no traces of the poison can possibly be discovered; but if epileptic symptoms take place, such appearances as epilepsy, either with or without poison, necessarily and specifically produces, may be expected.

AT a time when putrefaction is far advanced, and at a distant period from death, should the face be discovered of an intense
black

black colour, it may naturally be asked, from whence it arises. Does putrefaction occasion it? if it does, why does not putrefaction *always* give rise to this appearance? Why is not the body in general of the same complexion? Is putrefaction, different in kind or degree, dependent on the different texture of the parts? certainly not: putrefaction is universally the same, and nature is always simple and uniform in her operations. The blackness of the face is occasioned by putrefaction, but not by putrefaction only: if convulsions precede death, and the body becomes very putrid after it, the effect may be produced. I shall attempt to explain it, by first establishing two facts (clear and demonstrable as the two first propositions of Euclid) upon which I mean to reason.

THE first proposition, then, which I shall make, is this: As soon as an animal has breathed, and the foramen ovale is consequently shut up, the blood must pass from the right side of the heart, *through the lungs*, to the left side of the heart, before it can circulate to any other part of the body.

THE second is, That the human skin consists of three parts: the cutis, or true skin, thick, porous, and vascular; the cuticle, or scarf skin, thin, compact, and dense; and the rete mucosum, a fine expanded mucous membrane between them, more vascular in the face than it is in any other part of the body, and the seat of colour in men of all complexions *.

IN an epileptic paroxysm, respiration, which depends upon muscular action, is by spasms violently interrupted. Unless the lungs are expanded, the blood cannot circulate through the minute ramifications of the pulmonary artery, from the right side of the heart to the left. The vena cava, charged with all the returning blood from the head, will be unable to empty itself into the right auricle of the heart, already full: hence, an accumulation

* In the blackest negroe which the coast of Africa ever produced, the cutis is as white as the fairest European, the colour resides entirely in the rete mucosum. I viewed the human cuticle lately by a solar microscope, which magnified objects more than three million times, and no perforations were to be seen; so inconceivably minute are those pores which give passage to our insensible perspiration.

of

of blood will ensue in the head and face. The left ventricle of the heart, and the oscillatory motion of the arteries, will exert a power to overcome the resistance: but no more blood can be received by the vena cava, already overcharged. It must therefore either be propelled into a series of vessels, which in a state of health refuse admission to red blood, or the small arteries terminating in (what anatomists call) red veins, will be ruptured, and their contents consequently thrown out into the cellular membrane under the skin. When a muscle is in action, it becomes pale, the fibres swelling compress the interposed veins, and forcibly expel their blood, while that of the arteries is denied an entrance: and if *all* the muscles in a violent epilepsy are affected with convulsive spasms, the greatest quantity of that blood which used to circulate through them, must be determined to other parts where there is less resistance. The fluids, therefore, will either be propelled into the lymphatic system, crowded into the veins, or extravasated in the cellular membrane. The equipoise of the circulation will be destroyed; and the left ventricle of the heart, not receiving blood enough from

the lungs to excite irritation, contracts no more;—it ceases to beat. At the time, or soon after death, the extravasated blood is not visible through the skin: but when the process of putrefaction takes place, an intestine commotion ensues; an elastic air, pressing *quaquaversum*, distends the body; the stagnant blood is rendered both thinner and blacker; it soaks through the cutis, is refused a passage by the minute pores of the cuticle, and spreading abroad, *dyes the rete mucosum of a black colour.*

CLASS II.

HEMLOCK DROPWORT.

OENANTHE foliis omnibus multifidis obtusis
subæqualibus. *Lin. Sp. Plant.* 365.

OENANTHE cicutæ facie Lobelii. *Park.* 894.

OENANTHE chærephylli foliis. *Baub. Pin.*
162.

FILIPENDULA, cicutæ facie. *Gerard.* 1059.

OENANTHE, succo viroso, cicutæ facie.
Lobel. f. B.

OENANTHE maxima, succo viroso, cicutæ
facie. *Morif. Hist.*

OENANTHE tertia. *Matthioli*, p. 629.

THE root is long, thick, and tuberous,
extremely succulent, and on exposure
to the external air, the juice becomes of a
yellow complexion.

THE stalk is striated, round, branched,
and three feet high.

THE leaves are of a pale green colour: they are large, singly and doubly pinnated; each foliolum is wedge-shaped, smooth, striated with lines, and notched at the edges.

THE flowers are very small and white: they are disposed in small umbels, placed upon the principal stalks, with short ones at the subdivisions. Each flower is composed of five petals; some of them are inflected and heart-fashioned.

THE cup is large, and divided into five segments.

THE seeds are striated on one side, and dented on the other.

THIS plant is found upon the banks of the Thames, and many other rivers in England. It flowers in July.

HEMLOCK dropwort is one of the most terrible poisons which the vegetable kingdom produces.

MR. Lightfoot * says, that he heard that celebrated botanic painter, the late Mr. Christopher Ehret, declare, that while he was drawing this plant, the smell or effluvia only rendered him giddy, that he was several times obliged to quit the room, and walk out in the fresh air to recover himself: but recollecting at last what might probably be the cause of his repeated illness, he opened the doors and windows of his room, and the free air then enabled him to finish his work without any more returns of giddiness.

ELEVEN French prisoners had the liberty of walking in and about the town of Pembroke: three of them being in the fields a little before noon, found and dug up a large quantity of a plant with its roots, which they took to be wild celeri, to eat with their bread and butter for dinner. After washing it while in the fields, they all three eat, or rather tasted of the roots †.

As they were entering the town, without any previous notice of sickness at the stomach,

* Flor. Scot. vol. i. p. 162.

† Letter from Mr. Howell, Surgeon at Haverfordwest, to Dr. Watson. Phil. Trans. N^o 480, p. 229.

or disorder in the head, one of them was seized with convulsions. The other two ran home, and sent a surgeon to him. The surgeon endeavoured first to bleed, and then to vomit him: but those endeavours were fruitless, and the soldier died in a very short time.

IGNORANT yet of the cause of their comrade's death, and of their own danger, they gave of these roots to the other eight prisoners, who all eat some of them with their dinner. The quantity could not be ascertained.

A FEW minutes after, the remaining two, who gathered the plants, were seized in the same manner as the first, of which one died; the other was bled, and a vomit with great difficulty forced down, on account of his jaws being, as it were, locked together. This operated, and he recovered, but he was for some time affected with a giddiness in his head: and it is remarkable that he was neither sick, or in the least disordered in his stomach. The other eight, being bled and vomited *immediately*, were secured from
the

the approach of any bad symptoms. Upon examination of the plant, which the French prisoners mistook for wild celeri, Mr. Howell discovered it to be the *oenanthe aquatica cicutæ facie* of Lobel, which grows very plentifully in the neighbourhood of Haverfordwest. It is called by the common people there, five-fingered root, and is much used by them in cataplasms, for whitlows, &c. The persons above referred to, eat only the root of the plant, without any of the stalk or leaves.

* EIGHT young lads near Clonmel † in Ireland, mistook the roots of the *oenanthe crocata*, for the *fium aquaticum*, or water parsnep, and eat plentifully of them. A little time afterwards, going home, the eldest, almost an adult, without the least previous disorder or complaint, fell down backward, and died in convulsions. Four more died in the same manner before the morning, not one of them having spoken a single word from the moment the symptoms first appeared. Of the other three, one became furiously

* Phil. Transact. N^o 238.

† In that part of Ireland, this plant is called Tahow.
mani-

maniacal, but recovered his senses the next day. The hair and nails of another fell off. Only one of the eight escaped without any harm, who ran home above two miles, and drank warm milk, which caused a diaphoresis.

A DUTCHMAN likewise was poisoned with the leaves of this plant, boiled in his pottage. He took the herb for smallage, to which its leaves have great resemblance *.

ALLEN † mentions an instance of four children who eat of the roots of the *oenanthe cicutæ* facie. They appeared all in great agonies, and afterwards were convulsed. Very fortunately, however, in their fits they vomited, which was encouraged by giving them large draughts of oil and warm water: and by great care and attention they all recovered.

STALPART Vander Wiel, in his Observations, takes notice of the fatal effects of

* Dr. Watson's account to the Royal Society. Phil. Transf. N^o 480. accompanied with an excellent plate of the plant.

† Synops. Medicin.

the roots of this plant, in two persons who had mistaken them for those of the Macedonian parsley. Soon after eating the roots, they complained of violent heat in the throat and stomach, attended with a vertigo, sickness at the stomach, and purging. One of them bled at the nose: the other was violently convulsed. Both died: one in two hours, the other in three. This case is accompanied with figures of the plant, but not very well executed.

THE symptoms which attended the above recited case, were different from those of the French prisoners at Pembroke: as in the latter there was no complaint of heat in the mouth or throat, nor did any sickness or disorder of the stomach precede the convulsive paroxysms.

THE oenanthe is very common in Cumberland, where the common people call it dead tongue, and apply it boiled in cataplasms to some diseases in their horses*.

THE root of this plant has no ill taste: hence it is the more dangerous to those whose

* Threlkeld, Synops. Plantar.

curiosity or hunger may prompt them to eat it.

THE well-authenticated cases we have produced, sufficiently demonstrate that, unless timely prevented, epileptic symptoms, convulsions, and death, will be the consequences of taking hemlock dropwort. If the root should have been swallowed in a large quantity, or the violence of the spasms prevent any thing being conveyed into the stomach, no hope seems to remain: but if an active emetic can be given, either before the symptoms come on, or soon after their appearance, the patient may probably recover. After he has vomited, he should drink, if possible, large quantities of oil and water.

WATER

WATER HEMLOCK.

CICUTA umbellis oppositifoliis, petiolis marginatis obtusis. *Lin. Sp. Pl.* 366.

CICUTA aquatica. *Gesner. Hort.* 254.
Wepfer. de Cicuta.

CICUTA maxima quorundam. *Hort. Eystet.*

SIUM majus angustifolium. *Park.* 1241.

SIUM erucæ folio. *Baub. Pin.* 154.

SIUM alterum olusatrici facie. *Gerard.* 256.
Ray's Synops. 212.

SIUM alterum. *Dodon. Pempt.* 579.

SIUM foliis rugosis trifidis dentatis. *Morif.*
Umbel. 63. tab. 5.

SIUM, pinnis laciniatis, pinnulis trifidis, nervo non folioso. *Haller. Helv.* 436.

PHELLANDRIUM aquaticum. *Hill. Brit.*
Herb. 412.

THE root is large and hollow, divided into cells by transverse diaphragms; corresponding with which, the external surface

face is marked with circular depressions. At the beginning of winter, the root for the succeeding year is formed from the lower part of the stalk; and as the old root decays and rots, long white filaments are observed to extend themselves from the new root, which shoot into the soil, and secure the situation of the plant. Before this process takes place, the cells of the old root render it specifically lighter than water: hence in winter, upon a sudden rise of the water, it is buoyed up to the surface, and frequently carried by the stream to a considerable distance from the place where it grew.

THE stalk is large, round, fistular, of a pale green colour, and divides near the top into numerous branches.

THE leaves are of a pale green: they are pinnated with single, double, and triple foliola: each foliolium is spear-shaped, and finely serrated: the serratures are white at the tips.

THE flowers are small and white: they stand upon large umbels at the tops of the branches.

branches. Each flower consists of five petals, heart-shaped and inflexed. The seeds are oval, and furrowed with three prominent meridians.

It flowers in June, and is common on the banks of several rivers in England: it is fond of the still, soft, muddy sides of lakes and stagnant waters *.

ALTHOUGH this plant is one of the most deleterious which the vegetable kingdom produces, yet like the other poisonous plants before described, it affords protection and nourishment to various insects.

THE chrysomela phellandria, and the gilt leptura, are found upon the roots, and the curculio paraplecticus within its stems.

DR. Withering † informs us, that early in the spring when it grows in the water, cows often eat it, and are killed by it: but as the summer advances, and its smell be-

* Dr. Parsons met with it on the side of Loch-End in Scotland. Lightfoot's Flor. Scot. vol. i. 165.

† Arrangement of British Vegetables, vol. i. p. 176.

comes stronger, they carefully avoid it: hence the plant is sometimes called cow-bane. Although it is a certain and fatal poison to cows, goats devour it greedily, and with impunity, and horses and sheep eat it with safety. Linnæus assures us, that he has known cattle die by eating the roots: and Wepfer says that one ounce of it threw a dog into convulsions, and two killed him.

SCHWENKE, a German writer, gives an account of four boys who had the misfortune to eat of it, three of whom died in convulsions *.

IN the month of March 1670, two boys and six girls found the roots of the *cicuta aquatica* in a meadow, and upon tasting them, perceiving they were not unpleasant, they all eat some of them †.

THE two boys, who eat a large quantity, were soon after seized with pains of the precordia, loss of speech, an abolition of all the

* Schwenke, Catal. Stirp. & Fossil. Silesiæ.

† Wepfer, de *Cicutæ Aquaticæ Historia & Noxæ*, p. 7.

senses, and terrible convulsions. The mouth was so closely shut, that it could not be opened by any means. Blood was forced from the ears, and the eyes were horribly distorted. Both the boys died in half an hour from the first accession of the symptoms. The six girls, who had taken a smaller quantity of the roots than the boys, were likewise seized with epileptic symptoms, but in the intervals of the paroxysms, some Venus treacle dissolved in vinegar was given them; in consequence of which, they vomited and recovered: but one of them, the sister of the boys who died, after she vomited, had a very narrow escape for her life. She lay nine hours with her hands and feet out-stretched and cold: all this time she had a cadaverous countenance, and her respiration could scarcely be perceived. When she recovered, she complained a long time of a pain in her stomach, and was unable to eat any food, her tongue being much wounded by her teeth in the convulsive fits.

WEPFER has very minutely described the symptoms which took place in the first boy, in the following words:

G

“ JACOBUS

“ JACOBUS Mæder, puer sex annorum,
“ domum rediit hilaris ac subridens, quasi re
“ bene gesta: paulo post conquerebatur de
“ præcordiorum dolore, & vix verbum effa-
“ tus, humi prostratus urinam magno impetu
“ ad viri altitudinem eminxit: mox terribili
“ aspectu, cum omnium sensuum abolitione
“ convulsus fuit, os arctissime clausit, ut
“ nulla arte aperiri valuerit, dentibus stride-
“ bat, oculos mire distorquebat, sanguis ex
“ auribus promanabat; circa præcordia tu-
“ midam quoddam corpus pugni virilis mag-
“ nitudine patris afflicti manum & miseran-
“ di pueri præcordia, maxime circa cartila-
“ ginem ensiformem, validissime feriebat:
“ singultiebat crebro: vomiturus quandoque
“ videbatur, nihil tamen ore arctissime clauso
“ ejicere valuit: artus mire jaëtabat, & tor-
“ quebat, sæpius caput retrorsum abripieba-
“ tur, totumque dorsum incurvabatur in ar-
“ cum: ut puellus subtus per spatium inter
“ dorsum & stratum inoffense repere potu-
“ isset. Cessantibus convulsionibus per mo-
“ mentum matris opem imploravit: mox
“ pari ferocia illis redeuntibus nulla velli-
“ catione, nulla acclamatione, nullove alio
“ ingenio excitari poterat, donec viribus de-
“ ficientibus

“ ficientibus expalluit, & manu pectori ad-
 “ mota expiravit. Durarunt hæc sympto-
 “ mata vix ultra horam dimidiam. Post
 “ obitum imprimis abdomen, & facies intum-
 “ uerunt absque livore, nisi pauco circa
 “ oculos conspicuo. Ex ore cadaveris usque
 “ ad horam sepulturæ spuma viridis largissime
 “ emanavit, & quamvis sæpius a patre mæstif-
 “ fimo deterfa fuisset, mox tamen nova suc-
 “ cedebat *.”

* De Cicut. Aquat. p. 6.

L A U R E L.

LAURO-cerasus. *Gerard. Clus. J. Baub.*

CERASUS folio laurino. *C. Baub.*

CERASUS trapezuntina, five lauro-cerasus.
Park.

THE root is large, tough, and furnished with many fibres.

THE branches are woody, numerous, brown on the outside, and white within.

THE leaves are large, fleshy, oblong, shining, pointed at both ends, and slightly serrated at the edges: their upper surface is smooth, and of a beautiful dark green colour; the under side is rough, strongly marked with fibres, and of a light green complexion.

THE flowers appear toward the superior part of the branches: they are pentapetalous,
in

in five-leaved cups. They are followed by clusters of berries resembling cherries, and containing an oblong stone within the pulp of the fruit. It flowers in May, and ripens its fruit in September.

THE plant was first brought from Trapezus, a city near the Euxine sea, to Constantinople, from thence into Italy, France, Germany, and England. This beautiful evergreen is now become very common in our gardens: it is easily propagated, and bears very well the cold of northern climates.

THE leaves of laurel have a bitter taste, with a flavour resembling that of the kernels of the peach and apricot. They communicate an agreeable flavour to aqueous and spirituous fluids, either by infusion or distillation.

THE distilled water applied to the organs of smelling, strongly impresses the mind with the same ideas as arise from the *taste* of bitter almonds, or apricot kernels: it is so extremely deleterious in its nature, and sometimes so sudden in its operation, as to occa-

sion instantaneous death *; but it more frequently happens that epileptic symptoms are first produced.

THIS poison was discovered by accident in Ireland in the year 1728. Before that time it was not an uncommon practice there to add a certain quantity of laurel water to brandy, or other spirituous liquors, to render them agreeable to the palate. In the month of September 1728, at Dublin, three women drank some laurel water, and one of them, Mary Whaley, a short time afterward, became violently disordered, lost her speech, and died in about an hour. Anne Boyce was seized in the same manner, and died in a short space of time. Neither of them vomited. Frances Eaton, who drank no more than a spoonful of the water, did not find herself indisposed when the other

* A few spoonfuls of laurel water killed a large dog whilst it was passing down the throat, before it could be supposed to have reached the stomach.—MEAD'S WORKS, 4to. p. 128.

It was the custom of the late Dr. Nicholls, when he wanted dogs for anatomical purposes, to give them strong laurel water, as the most expeditious method of destroying them.—BROMFIELD ON NIGHTSHADE, p. 75.

Women

women were taken ill, but to prevent any bad consequence, took a vomit immediately, and no ill effects ensued *.

DR. Madden saw Anne Boyce twenty-four hours after her decease, but he could not obtain leave from her friends to open the body. She was about sixty years of age, her countenance and skin appeared of a natural colour, and her features were not altered. The abdomen was not swelled, nor was there any other external mark of poison.

ANOTHER accident of the same kind happened in the town of Kilkenny: a young gentleman, son to Mr. Evans of that place, mistook a bottle of laurel water for ptisan. It is uncertain what quantity he drank, but he died in a few minutes. This affair was not much regarded at that time, because he laboured under a distemper to which, or to an improper use of remedies, his death was attributed by those about him †.

* Phil. Transf. N° 418. p. 84.

† Ibid. p. 48.

DR. RUTTY of Dublin, in a letter to Dr. Mortimer, dated May 17, 1732, after observing that some people doubt the poisonous properties of laurel water, thus proceeds:

“ I can now confirm that it really is poison-
 “ ous by the following instance, the truth
 “ of which you may be assured of. At Li-
 “ fininy, in Westmeath, a girl of eighteen
 “ years of age, very well and healthy, took
 “ a quantity less than two spoonfuls of the
 “ first runnings of the simple water of laurel
 “ leaves; whereupon within half a minute
 “ she fell down, was convulsed, foamed at
 “ the mouth, and died in a short time, nor
 “ was there any swellings in her body *.”

HAVING procured some laurel water, I made with it the following experiments:

EXPERIMENT I.

MARCH 17, 1781. In the presence of Dr. Simson, two ounces of laurel water were given to a large strong dog. Two minutes after taking it, he appeared very uneasy, and the muscles of the back were affected with

* Phil. Transact. N^o 452, p. 63.

spasms.

spasms. After making violent efforts to vomit, he brought up what we supposed the greatest part of the water mixt with a thick frothy mucus. In a little time he vomited again, and in the space of three or four minutes by degrees recovered. One ounce more of the water was then given him, with which he was sooner affected than with the first dose: he breathed with difficulty, was sick, and vomited soon after; his head was drawn backward by that kind of spasm called opisthotonos. He fell down, and was so generally convulsed that he seemed to be at the point of death. The convulsions continued some minutes: he was placed upon his legs, but they appeared paralytic, and he could not stand. In less than half an hour from the time he took the first dose of laurel water, he perfectly recovered.

EXPERIMENT II.

MARCH 20. One ounce of laurel water was given to a young greyhound. Whilst Dr. Rattray held the mouth open, I poured the water into the dog's throat. As soon as it was swallowed, the doctor released his head,

head, to observe the effects of the poison, when, to our great surprise, the dog fell down upon his side, and without the least struggle, or any perceptible motion, was dead in a moment.

EXPERIMENT III.

MARCH 22. One pint and a quarter of laurel water was given to a mare aged 28 years *. Within a minute from the time it was swallowed, she seemed affected. Her flanks were observed to heave much, and a trembling seized her limbs. In two minutes she suddenly fell down upon her head, and a short time after was very violently convulsed. The convulsions continued about five minutes, at the expiration of which time, she lay still, but her breathing was very quick and laborious. Her eyes were much affected with continual spasms: at this time four ounces more of the water were given her, after which she seemed much weaker, without any more convulsions,

* In presence of Sir William Wheler, Dr. Rattray, and Mr. Snow, Surgeon.

and in about fifteen minutes from the time of her first seizure, expired.

SOME little time before her death, a remarkable appearance was observed in the carotid artery, through which the blood seemed to be very feebly pumped up in large globules, and not in a continued column, which seems to prove, that by the violence of the convulsions, the blood had been forced out of the arterial system into the veins; and from the difficulty with which it circulated through the lungs, there was not a sufficient quantity transmitted into the left auricle of the heart to continue the circulation: hence death was the consequence.

DISSECTION.

UPON opening the abdomen, a strong smell of laurel water was perceptible. The colon was not altered from its usual appearance; but the small intestines appeared of a purple colour, and their veins much distended with blood. The stomach contained some hay, mixt with the laurel water. Its inter-
nal

nal surface was not inflamed, except in a small degree near the pylorus, and where a number of botts were clustered. The lungs appeared remarkably full of blood: the small vessels upon their surface being as risible as if they had been injected with red wax.

By experiments made on various animals it appears, that the water of lauro-cerasus is extremely dangerous; and whether we consider the certainty of its effects, or the celerity of its operation, it is as wonderful a poison as any we have heard of, not excepting that with which the Indians prepare their arrows. Given by the mouth, or injected into the rectum, its operation is equally certain, and it acts the moment it touches the stomach, or is received into the intestines.

THREE tea spoonfuls of laurel water conveyed into the stomach of an eel, killed it in a few minutes; and it is well known that eels will live some time after their heads are cut off. It is equally mortal to small animals, if applied to wounds of the muscles, and death is as certainly the consequence, as
if

if they had taken it into the stomach. A wound was made in the skin of the belly of a rabbit, about an inch in length, the muscles were afterward slightly wounded in different places, and two or three tea spoonfuls of the water were applied to the part: in less than three minutes the animal fell down convulsed, and died soon after. This experiment was repeated, and the result was the same in different animals *.

THE water of lauro-cerasus produces generally very strong convulsions, and in a short time death. The spasmodic motions of the whole body are extremely violent, and the struggles are fatal in a short time.

Two tea spoonfuls only of the water were given to middle-sized rabbits: they fell down convulsed in thirty seconds, and died within a minute.

WHEN it is given very strong, and in large quantities to animals, they die almost instantly, and without convulsions, a sudden

* Phil. Transact. vol. lxx. part i. Append. xii.

and universal paralyfis coming on. If it is taken in a fmaller quantity, the convulfions are more or lefs ftrong: the hind feet firft lofe their motion, and afterward the fore feet become paralytic. Upon diffection, no uncommon appearances are obfervable in the ftomach, nor any inflammation upon the internal membranes. The arterial fystem is found empty, and the veins very turgid with blood. The finufes of the brain, and the veins of the pia mater, have been feen very much diftended; but thefe appearances may be better explained from the violence of the convulfions, than from any fpecific properties of the poifon.

IN many refpects the poifon of lauro-cerafus, and the American poifon called ticunas, agree in the fimilarity of their action *. They both, when received into the ftomach, occafion fudden agonies, and violent convulfive motions of the mufcles. Injected into the rectum, the refult is the fame. When they are applied to the large trunks of the nerves, they produce no effects at all. If

* Abbè Fontana, on the American poifon call ticunas. Phil. Tranfact. vol. lxx. part I.

they are brought into contact with wounds of the muscles, death is the consequence. But they differ very essentially in this respect. When the poison called *ticunas* is injected into the large veins, it soon proves fatal; whereas the water of *lauro-cerasus*, mixt with the blood in the same manner, produces no disorder, or any apparent effect.

THE Abbè Fontana having detached the sciatic nerve of a large rabbit more than an inch and a half, introduced under it a wrapper of very fine linen, sixteen times doubled, that the parts below it might not be penetrated by the water of the *lauro-cerasus*. He then wounded the nerve with many strokes of the lancet, in a longitudinal direction, and covered all this wounded part, which extended above eight lines in length, with a roll of cotton three lines in thickness, well steeped in laurel water. More than fifteen drops were necessary to moisten the cotton, and the fluid communicated itself directly by the wounds, to the medullary substance of the sciatic nerve. The whole was covered over about a minute after with new rags, so that it was impossible for the laurel water to touch

touch any other part but the wounded nerve. The external skin was sewed up, and the animal was set at liberty : it seemed not to be in the least affected either then or afterwards. It ran about, eat, and was as lively as ever. This experiment seems to prove, that the water of lauro-cerasus applied immediately upon the nerves, and insinuated into their medullary substance, is not at all poisonous ; consequently that it does not act upon the nerves, however applied, externally.

THE Abbè Fontana having observed, that the poison of the viper and the ticunas, like the lauro-cerasus, were innocent applied to the nerves, but immediately killed strong animals when introduced into the blood ; it was extremely natural to conclude, that laurel water would have the same effects : experience, however, determines quite the contrary, and shews us that the mode of reasoning by analogy, may sometimes prove deceptive. He introduced some of the water into the jugular vein of a large rabbit, in the same manner as he had done the poison of the viper, and the American poison, yet the animal discovered no signs of suffering. He suspected

suspected he had not performed the operation properly; that the syringe might possibly have insinuated itself into the cellular membrane, and that he had not introduced any of the water into the vessel: he therefore repeated the experiment, and introduced into the jugular vein a larger quantity of the poison than he had hitherto employed, and was careful to make the point of the syringe enter the vessel before he introduced the water; yet still the animal was not affected by it, but continued as lively as ever. He could not persuade himself to believe, that the water of lauro-cerasus was not a powerful poison when introduced into the blood, since it was poisonous applied to wounds of the muscles, and when taken by the mouth, although it was harmless if brought into contact with the naked trunks of the nerves. He therefore a third and a fourth time repeated the experiment, and introduced into the blood a larger quantity of laurel water than he had used before; but the result was in no respect different from the former essays *.

* Phil. Transact. vol. lxx.

DR. Mortimer gave to a puppy, one ounce and a half of laurel water: in two minutes time it became strongly convulsed, put out the tongue, and made strong efforts to vomit, but to no effect; it could not stand, but lay with its hinder legs stretched out: in five minutes it became more strongly convulsed, rolled over and over several times, drew its head back to its rump, then lay on its side, and panted much: he stretched out his fore legs, one after the other, drawing in his flanks very quick: in fifteen minutes more he died. An hour after his death, Dr. Mortimer opened the body. All the contents of the abdomen were in their natural state, the stomach was distended with wind, and contained a mucus of a much thicker consistence than the liquor gastricus naturally is; the inside of the stomach was *not at all inflamed*. Upon opening the thorax, he found the lungs a little redder than ordinary, with some vessels on the outward membrane very turgid: upon taking them out of the chest, a large quantity of clear red blood issued from them. The veins and ventricles of the heart were turgid, and full of coagulated blood. There was no blood in the arteries:

the

the foramen ovale was open. The head was next examined: the dura mater appeared livid, as if bruised; its vessels and the sinus falciformis were turgid, and full of blood. The cortical substance of the brain looked of an unusual livid colour *.

THE doctor after this procured a middle-sized spaniel, and poured some laurel water down his throat: he struggled pretty much at first, and whined, but when about an ounce and a half of it was down, he ceased to struggle: an ounce more of the water was then given him: he was laid down on the ground, but never offered to get up, only stretching out his legs, he expired directly. Soon after his death, Mr. Ranby opened him: the laurel water, with some frothy mucus, was found in his stomach: the veins in general were very turgid, but the blood was still fluid, and no alteration was found in any of the viscera †.

DR. Porter forced three ounces of laurel water down the throat of a large dog: about

* Phil. Transact. N^o 420, p. 163.

† Ibid. N^o 420.

two ounces of it were soon after discharged by vomit : in a few minutes he became violently convulsed, and in a short time after lay motionless, to all appearance was dying. Within ten minutes he vomited a second time, and threw up a small quantity of viscid frothy matter, from which moment he began to recover, and within half an hour was perfectly well *.

ON the third of October, 1728, Dr. Madden gave a large setting dog three ounces of laurel water. In three minutes he became strongly convulsed. The convulsions continued five minutes : then a violent difficulty of breathing came on, which lasted about eight minutes, and gradually abated : upon which he endeavoured to raise himself, but could not. The doctor gave him an ounce and a half more, when he sunk at once, and without any return of convulsions, or difficulty of breathing, he expired in two minutes. Upon opening the stomach, the doctor found therein the whole quantity of water he had taken : its surface was covered

* Phil. Transact. N^o 420.

with froth, but it was not otherwise altered in its colour, consistence, or smell. The inside of the stomach was *not in the least inflamed*, nor was there any visible alteration in the tunica villosa. The veins of the stomach, all the mesaraic veins, and likewise the vena cava, were much distended with blood: the arteries, on the contrary, were remarkably empty. The liver and gall-bladder were unaltered. The kidneys were unusually full of blood, and appeared of a bluish colour, almost as deep as that of the violet plumb. Upon making an incision into one of the kidneys, the blood flowed in a much larger quantity than usual. The heart exhibited no preternatural appearance *.

MANY similar experiments were repeated by Dr. Madden, with nearly the same effects. He found that the symptoms were equally violent and fatal, if the laurel water was injected into the rectum. Violent convulsions were the usual consequence, and (what may appear surprising) that kind of spasm called opisthotonos was generally pro-

* Phil. Transact. N^o 418. p. 84.

duced. If the animal vomited, he either became better soon after, or recovered, unless more of the poison was forced down the stomach. The spasms, however, which affected both orifices of the stomach at the same time, often prevented a rejection of the contents; and in that case there was no chance of recovery. In all the animals that were dissected, the *stomach* and the abdominal viscera were observed free from *inflammation*, the arterial system was *always* empty, and the veins remarkably distended with fluid blood.

ALTHOUGH the poison of laurel appears to consist in the essential oil brought over by distillation, yet it is much to be suspected that an infusion of its leaves may in some cases, and some constitutions, prove injurious. They have been in common use to give a flavour to custards, &c. but from an instance I saw of their effects, this practice should not be continued.

JAN. 27, 1780, I was desired to visit a young lady of an irritable habit of body. She was affected in the night with sickness:
when

when I saw her she had cold sweats, an irregular pulse, and such other symptoms that I suspected she had taken something extremely noxious into her stomach. Upon enquiry, I was informed by her mother that she had taken nothing which in her apprehension could disorder her: that her supper the preceding evening had been very easy of digestion, for that she had eaten nothing but some custard. Upon examination I found the custards were very strongly flavoured with laurel leaves. She continued ill a few days, and afterward perfectly recovered.

F I N I S

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